

What is Claimed is:

1. A method of planning a wireless local area network, comprising:
receiving floor plan data about a site for the wireless local area network;
5 receiving coverage data about the site for the wireless local area network;
receiving capacity data about the site for the wireless local area network; and
based at least on the floor plan data, the coverage data, and the capacity data,
determining quantity, placement, and configuration of a plurality of access points of the
wireless local area network.
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2. The method of claim 1 wherein the floor plan data is imported.
3. The method of claim 1 wherein the floor plan data is manually drawn via
computer.
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4. The method of claim 1 wherein objects in the floor plan data are associated with
radio frequency attenuation factors.
5. The method of claim 4 wherein objects in the floor plan data are associated with
20 radio frequency attenuation factors that depend on a technology standard of the wireless
local area network.
6. The method of claim 1 wherein the coverage data indicates coverage areas of the
site serviced by the plurality of access points.
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7. The method of claim 6 wherein the coverage data is indicated with at least the floor
plan data.
8. The method of claim 6 wherein the coverage data depends on a technology
30 standard of the wireless local area network.
9. The method of claim 8 wherein at least one coverage area supports one or more
technology standards of the wireless local area network

10. The method of claim 1 further comprising:

receiving wiring closet data, the wiring closet data indicating one or more locations for one or more distribution system switches at the site for the wireless local area network, the one or more distribution system switches to the plurality of access points.

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11. The method of claim 10 wherein determining quantity, placement, and configuration of the plurality of access points of the wireless local area network is further based at least on the wiring closet data.

10 12. The method of claim 11 wherein the wiring closet data includes redundant connection data to the plurality of access points.

13. The method of claim 1 further comprising:

based at least on the floor plan data, the coverage data, and the capacity data,
15 determining at least one of quantity, placement, and configuration of one or more distribution system switches at the site for the wireless local area network, the one or more distribution system switches connecting to the plurality of access points.

14. The method of claim 13 further comprising:

20 determining connections between the one or more distribution system switches and the plurality of access points.

15. The method of claim 1 wherein the capacity data includes one or more throughput rates for stations serviced by the plurality of access points.

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16. The method of claim 1 wherein the capacity data includes one or more average desired association rates for stations serviced by the plurality of access points.

17. The method of claim 1 wherein the capacity data includes one or more quantities
30 of stations serviced by the plurality of access points.

18. The method of claim 17 wherein the capacity data includes one or more quantities of active stations serviced by the plurality of access points.

19. The method of claim 17 wherein the capacity data includes one or more quantities of total stations serviced by the plurality of access points.
20. The method of claim 1 further comprising:
5 receiving association data.
21. The method of claim 20 wherein determining quantity, placement, and configuration of the plurality of access points of the wireless local area network is further based at least on the association data.
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22. The method of claim 20 wherein the association data includes allowable channels for the plurality of access points.
23. The method of claim 20 wherein the association data includes one or more
15 minimum rates for beacons of the plurality of access points.
24. The method of claim 20 wherein the association data includes one or more minimum rates for probe responses of the plurality of access points.
- 20 25. The method of claim 1 wherein the configuration of the plurality of access points of the wireless local area network determined based at least on the floor plan data, the coverage data, and the capacity data, includes multi-homing for the plurality of access points.
- 25 26. The method of claim 1 wherein the configuration of the plurality of access points of the wireless local area network determined based at least on the floor plan data, the coverage data, and the capacity data, includes power levels for the plurality of access points.
- 30 27. The method of claim 1 wherein the configuration of the plurality of access points of the wireless local area network determined based at least on the floor plan data, the coverage data, and the capacity data, includes channel assignments for the plurality of access points.

28. The method of claim 1 wherein the placement of the plurality of access points of the wireless local area network determined based at least on the floor plan data, the coverage data, and the capacity data, is manually adjustable via computer.
- 5 29. The method of claim 28 further comprising:
based at least on manually adjusted placement of the wireless local area network, determining at least one of the quantity and the configuration of the plurality of access points.
- 10 30. The method of claim 28 further comprising:
based at least on manually adjusted placement of at least one access point of the wireless local area network, determining the placement of at least one other access point of the plurality of access points.
- 15 31. The method of claim 28 further comprising:
based at least on manually adjusted placement of at least one access point of the wireless local area network, determining at least one of the coverage data and the capacity data of the site for the wireless local area network.
- 20 32. The method of claim 1 further comprising:
displaying at least the quantity and the placement of the plurality of access points of the wireless local area network.
33. The method of claim 1 further comprising:
25 permitting manual adjustments via computer to one or more of: the quantity and the configuration of the plurality of access points of the wireless local area network.
34. The method of claim 33 further comprising:
based at least on the manual adjustments, determining at least one of the quantity,
30 the placement, and the configuration of the plurality of access points.
35. The method of claim 33 further comprising:
based at least on manual adjustments, determining at least one of the coverage data and the capacity data of the site for the wireless local area network.

36. The method of claim 1 further comprising:
receiving preexisting access point data.
- 5 37. The method of claim 36 wherein determining quantity, placement, and
configuration of the plurality of access points of the wireless local area network is further
based at least on the preexisting access point data.
38. The method of claim 1 further comprising:
10 generating work order data based at least on the quantity, the placement, and the
configuration of the plurality of access points of the wireless local area network.
39. The method of claim 38 wherein the work order data includes installation
instructions for the plurality of access points of the wireless local area network.
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40. The method of claim 39 wherein the work order data includes installation
instructions for one or more distribution system switches connecting to the plurality of
access points of the wireless local area network.
- 20 41. The method of claim 1 further comprising:
pushing distribution system switch configurations to one or more distribution
system switches at the site for the wireless local area network, the one or more distribution
system switches connecting to the plurality of access points.
- 25 42. The method of claim 41 wherein the distribution system switch configurations
include management settings.
43. The method of claim 42 wherein the management settings include one or more of:
HTTPS settings, telnet settings, SNMP settings, logging settings, and time zone settings.
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44. The method of claim 41 wherein the distribution system switch configurations
include IP service settings.

45. The method of claim 44 wherein the IP service settings include one or more of: static route settings, IP alias settings, DNS settings, and NTP settings.
46. The method of claim 41 wherein the distribution system switch configurations
5 include authentication settings.
47. The method of claim 41 wherein the distribution system switch configurations include distribution system switch port settings.
- 10 48. The method of claim 37 wherein the distribution system switch port settings includes settings for distribution system switch ports connected to access points of the plurality of access points.
49. The method of claim 41 wherein the distribution system switch configurations
15 include distribution system switch VLAN settings.
50. The method of claim 49 wherein the VLAN settings include one or more of: VLAN name settings, tunnel affinity settings, IP address settings, aging time settings, distribution system switch port VLAN settings, STP settings, IGMP settings, and static
20 multicast port settings.
51. The method of claim 50 wherein the distribution system switch port VLAN settings specify membership of distribution system switch ports in VLANs.
- 25 52. The method of claim 1 further comprising:
pushing access point configurations to one or more access points of the plurality of access points.
53. The method of claim 52 wherein the access point configurations include SSID
30 settings.
54. The method of claim 53 wherein the SSID settings include at least one of: beaconed SSID settings, encrypted data SSID settings, and unencrypted data SSID settings.

55. The method of claim 52 wherein the access point configurations include encryption settings.

5 56. The method of claim 55 wherein the encryption settings include at least one of: encryption standard settings and encryption key settings.

57. The method of claim 52 wherein the access point configurations include 802.11 settings.

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58. The method of claim 53 wherein the 802.11 settings include at least one of: beacon interval settings, DTIM period settings, fragment threshold settings, long retry limit settings, maximum send lifetime settings, maximum receive lifetime settings, RTS/CTS settings, short retry limit settings, preamble settings, transmit power settings, channel
15 number settings, and minimum transmit rate settings.

59. Code planning a wireless local area network, comprising:

code that performs receiving floor plan data about a site for the wireless local area network;

20 code that performs receiving coverage data about the site for the wireless local area network;

code that performs receiving capacity data about the site for the wireless local area network; and

25 code that performs, based at least on the floor plan data, the coverage data, and the capacity data, determining quantity, placement, and configuration of a plurality of access points of the wireless local area network.

60. An apparatus planning a wireless local area network, comprising:

30 means for receiving floor plan data about a site for the wireless local area network;
means for receiving coverage data about the site for the wireless local area network;

means for receiving capacity data about the site for the wireless local area network;
and

means for, based at least on the floor plan data, the coverage data, and the capacity data, determining quantity, placement, and configuration of a plurality of access points of the wireless local area network.